

# A Suitable Framework for Quality Assurance in Distance Education in Developing Countries

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**Abstract**— Though the concept of Quality Assurance(QA) in Education is relatively new some guidelines are already in place. With the new concepts of education dissemination the need of newer effective QA methodologies are evident. The present work has been undertaken to derive a framework of digital distance education development in developing countries' environment that brings in the QA awareness in all phases of the digital distance education process. The work highlights upon the concept of Multi-modal Digital Distance Education and how QA relates to it. A suggestive framework for quality assurance of a course in distance format has been described along with the involved processes.

**Keywords**- Digital Distance Education, Multi-modal Digital Distance Education, Quality Assurance, LMS, UFG.

## I. INTRODUCTION

The need for Quality Assurance in distance education cannot be overemphasized. This is particularly important in the developing countries, because of the limited awareness among general public on the distance education programs and their qualities. The fear psychosis of the students of getting insignificant or nothing-at-all education from distance education providers as well as underestimation of such programs by the recruiters are not totally baseless since the comparisons between the face-to-face learning outcomes and the outcomes in distance mode reveal that there are cases of significant differences between the two in many cases. The quality of the distance courses compared to that of the classroom courses is poorer in many institutions. Even eminent Institutions that have their conventional face-to-face programs of world-class standard are sometimes deprived off proper recognition of their courses in distance mode, by the recruiters and general public. This aspect is well known. [1] Jadavpur University, one of the premier Universities of India, highly successful in its traditional course dissemination, is carrying out an experimental Multimodal Digital Distance Education [2] programme. The emphasis of the programme has been on proper quality control so that the students passing out of distance mode are treated in the industry for recruitment at par with those of face-to-face mode particularly if they are attending the same course. The effort has met some remarkable success. This paper describes the present workers' understanding of the methodologies and some aspects of quality assurance adopted by Jadavpur University, which can

be duplicated in other places particularly in developing countries.

Multimodal digital distance education uses several modes to disseminate the course to the students. The modes are selected according to the topics and pedagogical approach adopted for a particular topic. The primary intention behind the incorporation of multiple modes is to ease out the Internet bandwidth problems, to equip students with supporting tutorials, practical laboratory instructions for practicing offline, to support mentor-observed practical classes etc., which in effect enhance the "teaching-in-absentia" process in a more effective way even for practical and technical subjects. Evidences that this would in turn help in achieving a quality distance education are in view.

The framework is suggested keeping in mind the situations in the developing countries in general. It is assumed that the following are the weak points to stand out as hindrances in the way of a quality digital distance education:

- Communication technology
- Awareness on the effectively of digital distance education and acceptance of such systems
- Ignorance of quality assurance process that could be adopted
- Overall economic scenario.

## II. THE SUGGESTED FRAMEWORK

There is a requirement of identifying a set of new guidelines that need to be incorporated through a well-structured and disciplined process. A conceptual framework would help in assimilating the quality assurance process as well as ease up the process of implementation by following the steps defined in it. After experimenting with some trials and errors the present workers suggest the following framework for a distance education development that incorporates quality assurance in every step.

The shaded blocks in the following diagram indicate different areas of work. The bi-directional arrows indicate a feedback process whereas the unidirectional arrows indicate the sub-processes of a single process. The boxes with dotted outlines are the deliverables from one process to another. The flow lines of the deliverables are shown by round-ended unidirectional arrows. The double outlined boxes with a block

arrow indicate internal teamwork for a process. The interconnection between the factors and the program is denoted by double-lines and dotted lines. The suggested feedback factors for Multi-modal Digital Distance Education [3] are given in shaded shapes with dotted outlines.

To inbuilt quality assurance process there are 8 areas identified to work with.

#### A. Authorization and Governance

Here the provider institution is assumed to be a competent authority to launch such a course through distance education. The governance, management, financial control and quality assurance arrangements of the organization must be sufficient to manage existing operations and respond to development and change. This factor has not been considered for analysis further in the present work.

#### B. Course Planning

Both for an existing and a new course, planning a course must include the factors like sustainability, acceptability (by the recruiters/learners). This would consist of the following process along with its sub-processes.

##### 1) Iterative Requirement Process

The requirement analysis is very essential to obtain the opinions about the acceptability of the course to the employers. This process has two sub-processes, as discussed below.

##### 2) Market Survey

A survey work is to be done with an effective method. This should involve top rank people of the relevant field and the employment providers to get a sufficiently clear picture of the market demand of the course. The opinion of the industry and an association with subject expert at this stage will also bring out a rough outline of the course curriculum.

##### 3) Suggestions from Doamin Experts

The domain experts may provide their suggestion and judgment about the sustainability of such a program and the factor of employability of the students on request.

#### C. Course Curriculum Design

The quality assurance for the area of designing of the course curriculum meant for both the course launching period as well as the existing courses requires two processes.

##### 1) Feedback by Content Specialist Group

The curriculum is to be examined by a group of content experts for the initial approval of the curriculum of the course as well as iterative inspection for ongoing course. The content is to be considered for the course only after the experts' approval.

##### 2) Student Feedback

Feedback is to be taken about the course design from the students who are undergoing the existing course, if any. The inputs need to be fused with the statutory requirements of the provider organization or universities or Government like, credit requirement etc.

#### D. Courseware Developoment

The development process of the courseware needs iterative corrections to sustain the standard of the education, which are to be incorporated through the following processes:

##### 1) Content Expert Group Feedback

The developed courseware are to be checked by the content expert group first to make sure that the learning objective can be sufficiently fulfilled by the designed courseware. Diversions must be rectified. The copyright issues must be checked by adhering to guidelines.

##### 2) Human Computer Interaction (HCI) Expert Feedback

The user interface is to be tested by the HCI experts for suggestion about the appearance of the presentations, use of color, layout, visual consistency etc.

##### 3) Student eedback

In course development phase the student's feedback can be classified into two categories as discussed below:

###### a) User Focus Group (UFG) Feedback

UFG is formed by choosing a group of students. They would give suggestion and feedback about the courseware in all aspects.

###### b) Feedback from students undergoing the course

The direct users, i.e., the students undergoing the existing course, if any, should be questioned properly to get their opinions and problems about the intelligibility and the design of the courseware.

##### 4) Comparing the output of Assessments with IQ Grade

This idea is to be incorporated for understanding the intelligibility of the courseware delivered to the students. A preliminary IQ measuring test should be taken at the time of admission test as an additional test. It must not be related to the admission test. The admitted candidates should be graded as per this IQ test result in their profile, which is to be maintained by the management. Further assessment results, if necessary, are compared with the IQ result. In case of noticeable degradation, direct investigation need to be initiated. If it appears that the problem is related to the courseware, the corrective measures need to be taken. Some Annotations about The IQ Test

- The questions must be up to the standard and sufficiently capable to give the desirable index of IQ level of the learner.[4]
- The question set may differ depending on the age factor.
- The questions are to be set by following ABCD rule. The rule is:
- **Audience:** the target audience.
- **Behavior:** the change in behavior of the learner expected.
- **Condition:** under which condition the learning takes place.
- **Degree:** degree of performance expected from the students.

Consideration for Multi-modal Digital Distance Education reveals that the processes within the courseware development area should be tailor made for the different modes used in this system.

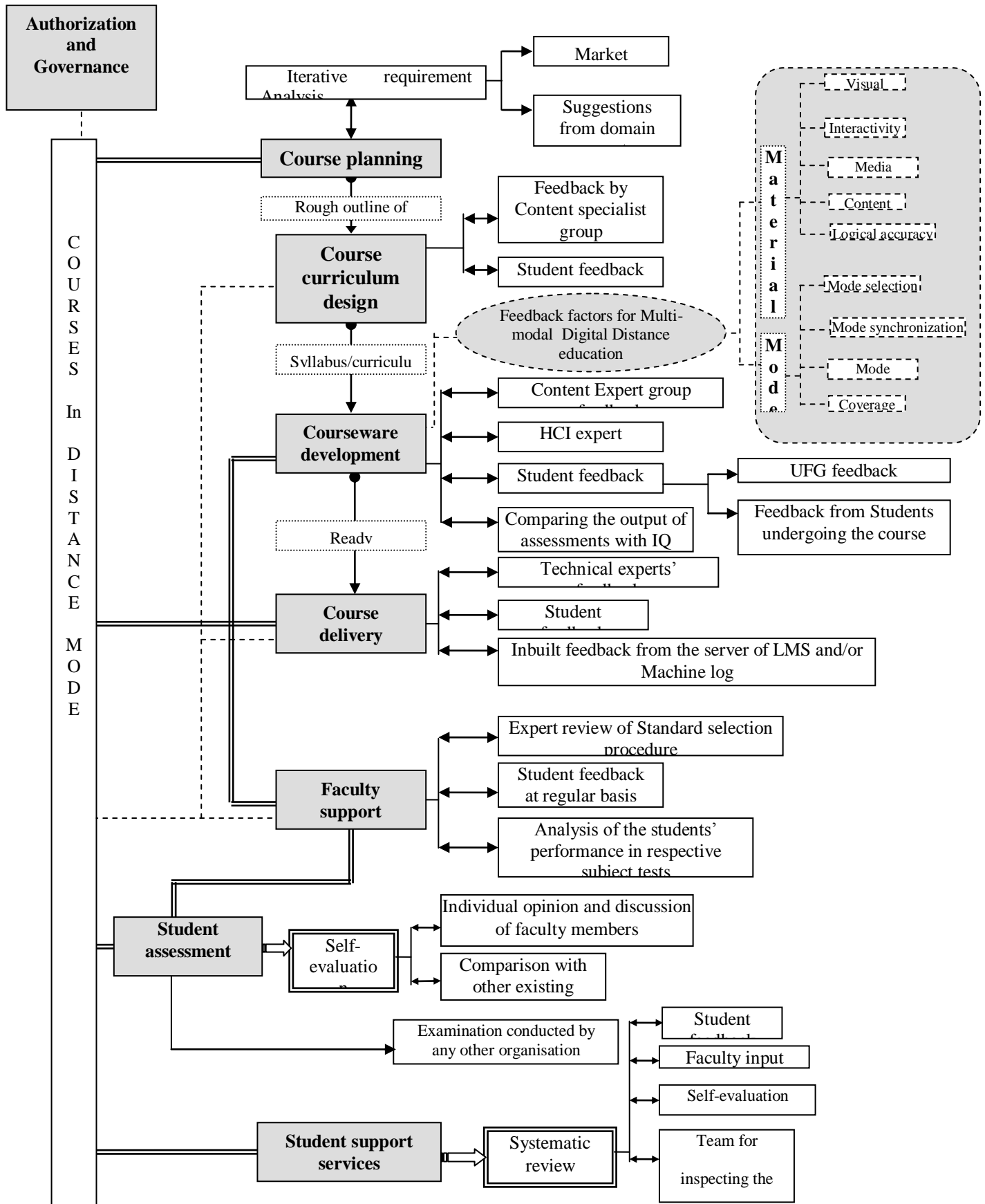


Figure 1. Multi Modal Distance Education Model

The developers deciding for Multi-modal Digital Distance Education system would require a bit different approach for this particular area, which incorporates the following feedback factors for consideration:

#### *E. Materials*

##### *1) Visual Design*

The interface design and visual consistency of all presentation materials need to be checked keeping the mode in mind.

##### *2) Interactivity*

The effectiveness of the interactive sessions is a significant factor to be judged. Again mode plays an important part in deciding the kind of interactivity that can be put in.

##### *3) Media Selection*

Proper selection of suitable media for a particular topic should be examined keeping the mode in mind.

##### *4) Content Flow*

The flow line of the total individual content and the navigational conveniences should be checked according to the mode used.

##### *5) Logical Accuracy*

The logical operability of the material should be consistently accurate for all modes.

#### *F. Mode*

##### *1) Mode Selection*

The proper selection of mode for each courseware segment is an important factor to be judged.

##### *2) Mode Synchronization*

The mode synchronization factor is to be checked as this factor has immense influence on the overall intelligibility of a particular subject.

##### *3) Mode Sequence*

The sequence of materials in several modes should finally appear to be coherent to the learners.

##### *4) Coverage*

The coverage of the material should be proportioned to different modes to avail the best possible result.

#### *G. Course Delivery*

The delivery of the courseware is of much importance as the students in the digital distance education system are distantly situated and are dependent immensely upon the proper and prompt delivery of the course materials. The quality assurance involved in this area consists of four processes, viz.:

##### *1) Technical Experts Feedback*

The technical infrastructure required for the dissemination of the courseware must be inspected by a group of technical experts to be sure about the technical soundness for proper delivery of courseware.

##### *2) Student Feedback*

The students are required to give their feedback about the suitability of courseware delivery and the speed of online courseware. The quality of audio, video etc are to be verified from the students.

##### *3) Inbuilt Feedback from the Server of Learning Management System (LMS) AND/OR Machine Log*

The information about the number of the students logged in the website throughout a particular time period, the pages entered by a student etc. should be obtained from the inbuilt feedback of the server in regular basis and should be analysed for students' participation in learning.

#### *H. Faculty Support*

The faculty members are the indispensable parts of any education system. The quality assurance is required to be performed in this area. It consists of the following processes:

##### *1) Expert Review of Standard Selection Procedure*

The recruitment procedure should maintain the standard so that the recruited people may consistently serve the system and help to maintain the quality. The procedure should be verified by the experts in an iterative way.

##### *2) Student Feedback at Regular Basis*

The feedback from the students undergoing the course should be considered with due importance. The feedbacks should be taken from the student making him or her anonymous so that he or she does not hesitate to express himself/herself appropriately as well as impartially.

##### *3) Analysis of Student's Performance*

A systematic analysis is important. The analysis can give many interesting insight of the education system including that of individual components and teachers' role etc.

#### *I. Student Assessment*

This area of work should be continuously verified by means of the following processes.

##### *1) Feedback by Self Evaluation Team*

The provider organization should build up an evaluation team of its own, consisting of some of the faculty members to build up an overall feedback report by means of the following components:

###### *a) Individual Opinion of Faculty Member*

The system should give opportunity to faculty members to give their suggestions and opinions about the examination systems in open discussions.

###### *b) Comparison with existing system of other Education Provider*

Comparison with the other similar education systems would bring new change to the system.

#### *J. Examination Conducted by any other organization*

The examination process may be conducted by any third party for more authenticated learning process evaluation and verification.

##### *1) Student Support Services*

The student support services form an important part, which requires sufficient attention. The ways to assure the quality of these services are systematic review and consideration about the following processes.

###### *a) Student Feedback*

The students should be given freedom to state openly their inconveniences or suggestions to enhance different dimensions

of the services. The primary factors to be considered for taking feedback are overall technical problems and the study materials along with the pedagogical approach.

*b) Faculty Input*

The faculty, too, should give their opinion freely about the availability and enhancement of the services.

*c) Self Evaluation Team*

The existence of a self-evaluation team may help in enhancement of the services and suggest if any additional services to be added.

*d) Team for inspecting the Public awareness Scheme*

A special team is to be developed for scrutinizing the activities in this particular area for general public awareness, which would look for the newspaper advertisements, seminars, and websites for the exposure of the course to general people as well as the recruiters.

### III. CONCLUSION

The framework, described in the present paper, is a suggestive one, based on some experimental model which may be implemented for quality assurance both in Multimodal and non-Multimodal distance education programs. The suggested framework has definite subtle differences from existing commonly adopted methodologies. The concept about Multimodal dissemination process may help in taking a more logical approach towards the development of distance education systems. The common problems in achieving a superior quality distance education may be counteracted with the proper incorporation of the highlighted concept, especially in the developing countries.

### REFERENCES

- [1] Prasad, VS, Strategies for Sustainable Open and Distance Learning, "Chapter 7", 7-2 to 7-3," [www.col.org/worldreview/volume6.htm](http://www.col.org/worldreview/volume6.htm)
- [2] T.K.Ghoshal, K.Datta, S.Bhattacharya, Jadavpur University, "Multimodal Digital Distance Education – The JU Model", <http://elearn.cdac.in/.../PDF/21-Multimodal%20Digital%20Distance%20Education%20–20The%20JU%20Model-21.pdf>
- [3] Prakash, V, "Internationalization of higher education: The Indian context", International Institute for Educational Planning, 2005
- [4] Betz Muhammad, "curriculum, instruction and the internet", Educational Technology & Society 3(2), 2000
- [5] Middlehurst R., "Quality Assurance Implications of New Forms of Higher Education", European Network for Quality Assurance in Higher Education, 2001